

Notice of Allowability

Application No.

10/725,977

Examiner

Toniae M. Thomas

Applicant(s)

CHAKRAVARTHI ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the election filed on 18 January 2005.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☐ The drawings filed on 01 December 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 12/01/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Mary Wilczewski
Primary Examiner

EXAMINER'S AMENDMENT

1. This application is in condition for allowance except for the presence of claims 13-27 non-elected without traverse. Accordingly, claims 13-27 have been cancelled.

Amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. The application has been amended as follows:

In Claims

Claims 13-27 have been canceled.

Reasons for Allowance

4. The following is an examiner's statement of reasons for allowance: the prior art of record does not anticipate, teach or suggest a method of forming a retrograde well in a transistor substantially as claimed. For example, Sayama (US 2002/0031883 A1) discloses a method of forming a semiconductor device (figs. 1-10 and accompanying text). The method comprises the steps of: forming a transistor structure having a substrate 1, a gate 41/42, and a gate oxide layer 3 between the substrate and the gate, the substrate including a channel region located generally below the gate (fig. 2 and par. 53, line - par. 57, line 7); implanting a first dopant into the channel region (fig. 3; par. 58,

lines 3-9; par. 60, lines 1-6; fig. 5; and par. 66, line 3 - par. 68, line 4); implanting a second dopant into the substrate to form a doped source region and a doped drain region 71/72 (fig. 8 and par. 74, lines 1-10; fig. 9 and par. 75, lines 1-11); and performing a source/drain anneal to form a source and a drain in the doped source region and the doped drain region, respectively (par. 76, lines 1-3). However, Sayama does not anticipate, teach or suggest the following steps, as recited in claim 1: implanting a third dopant into the gate oxide layer; and performing a source/drain anneal to form a source and a drain in the doped source region and the doped drain region, respectively, such that the source/drain anneal causes a portion of the first dopant in the channel region to be attracted by the third dopant into the gate oxide layer. There is no teaching or suggestion within the prior art of record to modify Sayama by implanting a third dopant into the gate oxide layer; and performing a source/drain anneal, such that the source/drain anneal causes a portion of the first dopant in the channel region to be attracted by the third dopant into the gate oxide layer.

5. The Huster et al. patent (US 6,426,279 B1) discloses a method of forming a retrograde well in a transistor. However, Huster et al. (Huster) does not anticipate, teach or suggest a method of forming a retrograde well, wherein the method comprises the combination of steps substantially as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should

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preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toniae M. Thomas whose telephone number is (571) 272-1846. The examiner can normally be reached on Monday-Thursday from 8:30 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TMT
18 April 2005


Mary Wilczewski
Primary Examiner